



## PLUGGING AND ABANDONMENT OF BOREHOLES

**EG&G ROCKY FLATS PLANT  
EMD MANUAL OPERATION SOP**

**Manual:  
Procedure No.:  
Page.  
Effective Date:  
Organization:**

**5-21000-OPS  
GT.5, Rev. 2  
1A of 8  
2-28-95  
Environmental Management**

**Category 2**

### LIST OF EFFECTIVE PAGES

<u>Pages</u>	<u>Effective Date</u>	<u>Change Number</u>
1-4	1/10/94	93-DMR-000961
6	2/28/95	95-DMR-000106
7-8	1/10/94	93-DMR-000961
Form GT 5a (Rev 3)	1/10/94	93-DMR-000961

## PLUGGING AND ABANDONMENT OF BOREHOLES

EG&G ROCKY FLATS PLANT  
EMD MANUAL OPERATION SOP

Manual:  
Procedure No.:  
Page:  
Effective Date:  
Organization:

5-21000-OPS  
GT.5, Rev. 2  
6 of 8  
2-28-95  
Environmental Management

Category 2

95-DMR-000106

density of 9.9 pounds per gallon after mixing. A mud balance will be used to check the grout density for each borehole prior to pumping. The grout will be tremied using a side-discharge tremie pipe. The tremie pipe can be raised during grouting, but it will be maintained at least 5 to 10 feet below the upper level of the grout. The grout will be pumped until any other fluids have been displaced from the hole and undiluted grout is observed flowing from the hole. The tremie pipe will then be removed from the hole. For the OU-2 Trenches and Mound Site Characterization Program, the following procedure will be utilized to abandon the shallow (less than 10 feet) direct push soil gas or subsurface soil sample locations in which groundwater was not encountered. Plugging of these locations will involve slowly pouring dry bentonite pellets down the direct push hole, then hydrating with on-site Rocky Flats potable water according to manufacturer's recommendations. After settlement of the bentonite grout, the hole will be cleaned out to a depth of approximately 3 feet and a cement bentonite grout will be placed from the ground surface to a depth of approximately 3 feet. This cement bentonite grout cap will be installed after 24 hours or more to allow for primary grout settlement. If the initial grout settlement is 3 feet or more, the upper grout surface will be rehydrated by adding water and waiting approximately 30 minutes prior to placing the cement bentonite grout cap. Alternatively, the dehydrated grout may be removed. A metal cap with the borehole ID and survey information will be embedded in the cement bentonite grout. The following information will be inscribed in the cap. See the Field Sampling Plan (FSP) for survey requirements.

- Borehole number
- Survey coordinates
- Elevation
- Date